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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/420,945	10/19/1999	STEPHEN C. KENYON	1576.1	3459
5514	7590	02/02/2004	EXAMINER	
FITZPATRICK CELLA HARPER & SCINTO			BROWN, RUEBEN M	
30 ROCKEFELLER PLAZA			ART UNIT	
NEW YORK, NY 10112			PAPER NUMBER	

2611

DATE MAILED: 02/02/2004

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Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/420,945

Applicant(s)

KENYON, STEPHEN C.

Examiner

Reuben M. Brown

Art Unit

2611

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-10, 12-17 & 19-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kenyon, (U.S. Pat # 4,843,562).

Considering claim 1, the claimed apparatus for recognizing input data stream comprising a receiver for receiving the input data stream, and an interface for selecting any one portion of the received data stream, and forming a first plurality of feature time series waveforms corresponding to spectrally distinct portions of the received data stream is met by the disclosure of Kenyon, which teaches receiving broadcast information and processing the broadcast information to provide a plurality of analyzed waveforms, Abstract; col. 7, lines 35-58.

As for the claimed feature of storing a second plurality of waveforms and correlating the first and second plurality of waveforms and designating a recognition when a statistic correlation

Art Unit: 2611

between the first and second plurality of waveforms reaches a predetermined value, Kenyon discloses that a reference signals are also processed and stored in a large signature database, col. 7, lines 4-21. Kenyon goes on to teach that the broadcast signals are compared to the reference signals, using a first stage classification see; col. 5, lines 4-31 & col. 8, lines 46-60, which meets the claimed processor structure for correlating the first and second feature time series waveforms.

The additionally claimed feature of designating a recognition when the a statistic of the correlation routine reaches a predetermined value, reads on the disclosure of Kenyon that detects when the amplitude level of the correlation function reaches a predetermined threshold; see col. 7, lines 50-57.

As for the recitation of an interface for randomly selecting portions of the data stream, Kenyon does not explicitly disclose such a feature. Nevertheless, Official Notice is taken that at the time the invention was made, randomly selecting portions of a signal to be analyzed was known in the art. It would have been obvious for one of ordinary skill in the art at the time the invention was made, to modify Kenyon with the well-known technique randomly selecting portions of a signal for analysis, at least for the desirable effect of providing a wider distribution of the analysis.

Considering claims 2-3, Kenyon discloses that the invention is applicable to radio & TV broadcast signals, which includes audio & video data, col. 6, lines 48-56.

Art Unit: 2611

Considering claim 4, see col. 4, lines 46-52.

Considering claim 5, since Kenyon is directed to monitoring broadcast signals, it would have been obvious for one of ordinary skill in the art at the time the invention was made, to switch the tuner to receive a different input stream after, the current input stream has been identified, at least in order to more efficiently utilize the resources.

Considering claim 6, the claimed plurality of overlapping portions of the received data stream is broad enough to read on video data; in that odd field one overlaps the event field in order to form each frame of video data.

Considering claim 7, Kenyon teaches rank-ordering feature time series, col. 5, lines 20-45; col. 7, lines 12-16 & col. 8, lines 46-50.

Considering claim 8, Kenyon discloses generating a most distinctive, i.e. descriptive value for different segments of the data stream, col. 16, lines 1-22.

Considering claim 9, Kenyon discloses normalizing the input data, col. 8, lines 28-30; col. 12, lines 51-55 & col. 15, lines 25-30.

Art Unit: 2611

Considering claim 10, Kenyon discloses that system process the signals using a time/frequency matrix, which reads a Fourier analysis; (col. 12, lines 45-50 & col. 13, lines 4-15). Moreover, it is more specifically discussed that Fourier transforms are used, col. 15, lines 23-24.

Considering claim 12, Kenyon teaches the well-known feature of time & date parameters are utilized, col. 6, lines 55-58.

Considering claim 13, the correlating function meets the claimed subject matter; Fig. 1, col. 5, lines 10-60 & col. 7, lines 50-67.

Considering claim 14, Kenyon estimates false alarm probabilities, col. 9, lines 15-25.

Considering claim 15, Kenyon teaches zero-filling feature time series for expansion of the waveform, col. 8, lines 20-25; col. 14, lines 15-35; col 14, lines 60-64 & col. 15, lines 5-17.

Considering claim 16, see Kenyon, col. 5, lines 10-55 & col. 8, lines 55-65.

Considering claim 17, the claimed elements of an apparatus of forming video features from an input stream that corresponds with subject matter mentioned above in the rejection of claims 1 & 6-8 are likewise analyzed. Kenyon, col. 7, lines 47-53 & col.10, lines 14-40, meets the further claimed feature of using low rate time series.

As for the additionally claimed feature of transforming the rank-ordered interval segments to produce complex spectra, it is disclosed that the input data undergoes a Fourier transform, col. 2, lines 58-65 & col. 15, lines 22-25.

Considering claim 19, the claimed elements of an apparatus of forming audio features from an input stream that corresponds with subject matter mentioned above in the rejection of claims 1 & 6-8 are likewise analyzed. The additionally claimed feature of extracting energy from each of the plurality of frequency bands and integrating the extracted energy is met by col. 12, lines 1-40. It is taught that the input data is placed in energy bands and a summation is taken over the band series.

As for the additionally claimed feature of transforming the rank-ordered interval segments to produce complex spectra, it is disclosed that the input data undergoes a Fourier transform, col. 2, lines 58-65 & col. 15, lines 22-25.

Considering claim 20, the claimed method of recognizing an input data stream corresponds with subject matter mentioned above in the rejection of claim 1, and is likewise analyzed.

Art Unit: 2611

Considering claim 21, the claimed method of forming video features from an input video stream corresponds with subject matter mentioned above in the rejection of claim 17, and is likewise analyzed.

Considering claim 22, the claimed method of forming audio features from an input audio stream corresponds with subject matter mentioned above in the rejection of claim 17, and is likewise analyzed.

Considering claim 23, the claimed features that correspond with subject matter mentioned above in the rejection of claim 1 are likewise analyzed. Furthermore, it is disclosed that the system is microprocessor based, thereby including the recitation of a computer readable storage medium that causes one or computers to perform the claimed subject matter; see col. 16, lines 39-48.

Considering claim 24, the claimed features that correspond with subject matter mentioned above in the rejection of claim 17 are likewise analyzed. Furthermore, it is disclosed that the system is microprocessor based, thereby including the recitation of a computer readable storage medium that causes one or computers to perform the claimed subject matter; see col. 16, lines 39-48.



Art Unit: 2611

Considering claim 26, the claimed features that correspond with subject matter mentioned above in the rejection of claim 20 are likewise analyzed. Furthermore, it is disclosed that the system is microprocessor based, thereby including the recitation of a computer readable storage medium that causes one or computers to perform the claimed subject matter; see col. 16, lines 39-48.

Considering claim 27, the claimed features that correspond with subject matter mentioned above in the rejection of claim 1 are likewise analyzed. The additionally claimed feature of correlating the most distinctive features of each stored pattern is met by col. 16, lines 1-25. The claimed features of estimating the probability that correlation value could occur from a random event, rejection of those candidate patterns above a certain threshold and accepting the candidate4 pattern if above a threshold reads on col. 9, lines 15-25. Kenyon does not discuss that the estimating procedure is repeated for unresolved patterns. It would have been obvious for one of ordinary skill in the art at the time the invention was made, to also repeat the estimation process for unresolved patterns, for the desirable improvement of more accurately identifying the entire broadcast stream.

3. Claims 11 & 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kenyon, in view of Mobin, (U.S. Pat # 6,532,273).

Art Unit: 2611

Considering claim 11, Kenyon does not discuss performing a polyphase decimation function on the data stream. However, Mobin discloses that polyphase decimation filtering is used to filter multiple phases of an input signal, for instance odd & even fields of an interlaced TV signal; see Abstract; col. 2, lines 21-45 & col. 3, lines 60-67. It would have been obvious for one of ordinary skill in the art at the invention was made to modify Kenyon, with technique of polyphase decimation filtering at least for the benefit of handling filtering of a video stream at higher speeds, as taught by Mobin, col. 1, lines 12-22.

### *Conclusion*

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- A) Kim Teaches rank ordering features in a pattern recognition system.
- B) Bhadkamkar Discloses operating on overlapping segments in an image analysis system, col. 4, lines 20-40.
- C) Bramley Teaches Fourier analysis
- D) Lu Generic correlation of patterns.
- E) Fan Pattern recognition.

Art Unit: 2611

**Any response to this action should be mailed to:**

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**or faxed to:**

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**Or:**

(703) 746-6861 (for informal or draft communications, please label  
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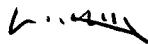
*Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive,  
Arlington, VA., Sixth Floor (Receptionist).*

Any inquiry concerning this communication or earlier communications from the  
examiner should be directed to Reuben M. Brown whose telephone number is (703) 305-2399.  
The examiner can normally be reached on M-F (8:30-6:00), First Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's  
supervisor, Andrew I. Faile can be reached on (703) 305-4380. The fax phone numbers for the  
organization where this application or proceeding is assigned is (703) 872-9306 for regular  
communications and After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding  
should be directed to the receptionist whose telephone number is (703) 305-4700.

Reuben M. Brown

  
VICTOR R. KOSTAK  
PRIMARY EXAMINER